AVIATION'S BEST-KEPT SECRET

The Civil Air Patrol is more than uniforms

Story and photos by Mike Roberts

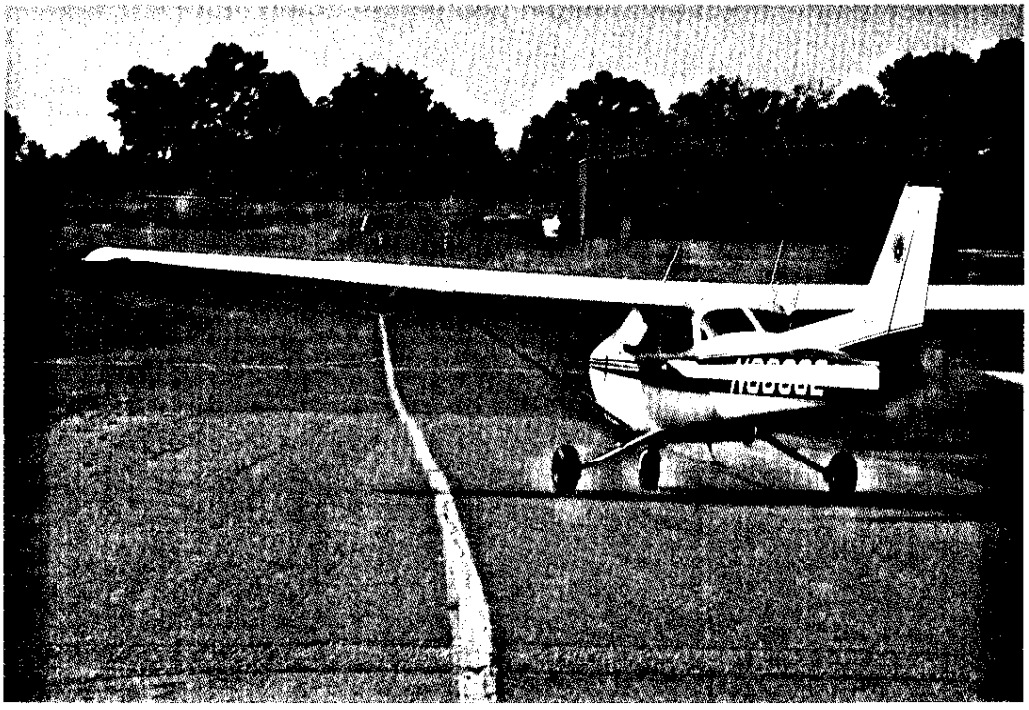
When tropical storm Alberto drenched Georgia with record-breaking rains that brought floods, misery and death, the CAP responded by land and air.

IT'S SATURDAY, and the long room adjacent to the airport ramp is crowded with people preparing for war. Adults and teen-agers uniformed in a collection of green-camouflage and blue uniforms stand at ease but alert. It's 8 a.m. and the warm June day would make for good sleeping, but yawns are absent. Everyone's listening.

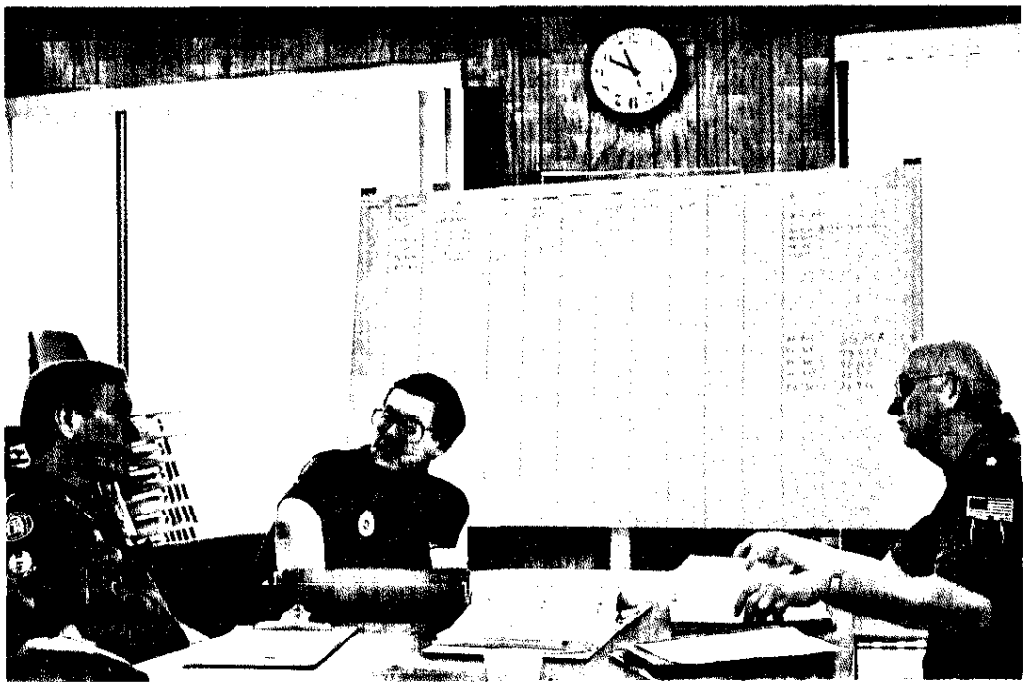
In the middle of the sea of soldierly attire are men talking about refueling procedures, operations times, communication frequencies—and safety. Listeners are reminded to stow their caps on the ramp lest headgear foul a prop or engine. They're told about towers that could eat an unwary pilot's airplane.

Then after a warning—"Don't do nothin' dumb"—they're dismissed and they scatter. Some head for trucks and airplanes, some to the radio room upstairs, while still others sit down to paperwork and planning boards.

The date was June 18, 1994, the place was Briscoe Field northeast of Atlanta and the people in uniforms were about 60 members of Civil Air Patrol units from across Northern Georgia. They and their counterparts in other locations



Typical of frequent CAP exercises, a CAP Cessna taxies out of Briscoe Field, Georgia, to survey simulated hurricane damage during a training exercise.



The Civil Air Patrol needs pilots and non-pilots alike to carry out non-flying tasks, such as coordinating pilots, aircraft and search areas.

across the state were preparing to fight the disastrous aftermath of a hurricane – a mock one.

The day went well for the CAP's Georgia Wing. The Air Force, which critiqued the exercise, gave the wing a grade of "excellent."

The affair was a timely dress rehearsal – the actual performance came about two weeks later, when tropical storm Alberto drenched Georgia with record-breaking rains that brought floods, misery and death. The CAP responded by land and air. It brought National Guard troops to the afflicted areas and unloaded supplies, it set up shelters for people displaced by the floods, it sent a team to inspect a threatened dam and it conducted aerial surveys of damage.

The air and ground teams, all unpaid volunteers like other CAP members, did their jobs without any major problems. Participants could be content with a job well-done and the satisfaction of having helped others in need. They had to be, for they got little recognition outside their organization.

But that's not unusual. Members only half-jokingly refer to the CAP as one of America's best-kept secrets. It gets scant attention from the news media. Even a lot of pilots don't know of it, or they misunderstand what it is, what it does and how it does it.

The cockpits of CAP aircraft, such as this Cessna 172, are just like other civil aircraft. Direction-finding equipment is panel-mounted, and GPS and loran receivers aid in search navigation.

THE CIVIL AIR PATROL is a war baby, born the Monday before the attack on Pearl Harbor plunged the United States into World War II. An act of Congress gave the CAP life and several purposes, one of which seemed to anticipate the nation's entry into World War II: Help develop American aviation and air supremacy.

Other objectives were more peaceful: Encourage civil aviation in local communities, develop voluntary contributions of private citizens to the public welfare, provide aviation education and training and help meet national and local emergencies.

Among the CAP's first missions under that charter was helping fight German submarines. By 1942, Nazi U boats were ranging the length of the Eastern Seaboard and Gulf Coast, sinking an alarming number of merchant ships with torpedoes and cannon fire.

At first, the CAP's light aircraft were used defensively. They flew over shipping lanes, reporting any prowling subs as well as flounder ing merchant ships and struggling sailors. Later,

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it switched to the offensive, the CAP equipping some its airplanes with bombs, depth charges and jury-rigged bomb sights to harass the Germans.

The CAP was credited with spotting 173 subs, bombing or depth-charging 57 and sinking or damaging at least two. (However, one CAP member in Massachusetts disputed the sinkings. In a message sent to other aviation enthusiasts via a computer bulletin board in 1991, he claimed that his checks of U.S. and German records of sub sinkings led him to believe that "what is written into CAP history is probably nothing more than conjecture.")

But the CAP's value in at least bothering the subs was recognized in high places. "It should be noted that for one period—at the start of the war—this CAP was the only agency that was able to take any real action toward controlling the submarine menace," wrote former General of the Army Hap Arnold in the 1948 book *Flying Minute Men: The Story of Civil Air Patrol*.

The CAP did more than hunt submarines. During the war, it flew an aerial-courier service for the armed forces and defense plants, towed targets for anti-aircraft gunners and flew airborne-sentry duty along the Mexican border. It also did strictly peaceful work such as spotting forest fires, airlifting supplies and finding lost airplanes.

In 1943, the CAP was put under the control of the Army Air Forces, the forerunner of the Air Force. In 1946, the CAP received a federal charter that extended the organization's life beyond that of other wartime volunteer groups and set it up as a benevolent civilian corporation. In 1948, CAP became the official auxiliary of the Air Force.

WITH ITS HEADQUARTERS at Maxwell Air Force Base near Montgomery, Alabama, today's CAP comprises 52 wings, one in each state, one in Washington, D.C., and one in Puerto Rico. Those wings contain about 1700 individual units operating more than 500 CAP-owned aircraft, 5000 privately owned aircraft and 900 support vehicles. Membership as of April 1994 was nearly 19,000 cadets, ranging in age from 13 to 21, and 34,000 adult members.

Though their numbers have dropped since the war, when membership swelled to more than 100,000, today's CAP seniors and cadets share an attitude with their predecessors: enthusiasm.

CAP Lt. Col. Benjamin Stone, a rated commercial pilot for 60 years, joined immediately after Pearl Harbor. Why has he stayed active in the CAP this long? "For me, it's a way of staying young, staying viable, keeping interested, and because I'm a patriotic American."

1st Lt. Preston Sewell joined four years ago with a fresh private license to learn more about flying and search and rescue. "CAP is very challenging and gives you something to do with your flying that's very productive."

As did their counterparts during World War II, members still wear uniforms, at least on some occasions. They no longer attack submarines, but they do occasionally help patrol the nation's borders. Some members, after receiving special clearances and training, fly reconnaissance missions for the Drug Enforce-

CAP Lt. Col. Tom Berg (right) and Major Eric Berg preflight for a training mission. Safety programs keep the CAP accident rate lower than general aviation's.

CAP cadet Mike Knox demonstrates use of a portable ELT direction finder to other cadets in the Cobb County, Georgia, composite squadron.

CAP Lt. Col. Tom Berg tackles preflight paperwork, a necessary aspect of flying in the CAP. Uniforms are also required when flying CAP aircraft.

ment Administration and U.S. Forest Service. CAP members help support other organizations, such as the Federal Emergency Management Agency (and similar agencies in individual states), the FAA, the Red Cross, the Salvation Army and the Defense Department.

The CAP still conducts aerial searches for lost aircraft and their occupants. The Air Force hasn't taken over that operation, partly because it has no aircraft that can fly as low, as slow and as inexpensively as the CAP's lightplanes, said Lt. Col. Jim Belzer, commander of the Rome, Georgia, composite squadron.

"Think of it this way," Belzer explained, "if the Air Force had to do the same thing we're doing, it would cost taxpayers millions of dollars just to get everybody together."

In 1992, CAP members flew 130,000 hours with an accident rate of 1.54 per 100,000 hours.

Technology has made search-and-rescue flying easier than it was in 1941. ELT signals from downed airplanes can be picked up by orbiting satellites and relayed to ground monitoring stations, then on to the CAP. And the presence of loran and GPS in the cockpit helps pilots and crews stay in their assigned search sectors and navigate precisely within those sectors (See sidebar, p. 60).

Unfortunately for CAP members and everyone else involved, ELTs don't go off only when crashes occur and occupants need to be found. Major John Martin, commander of the Cobb County, Georgia, composite squadron, told of one incident in which a pilot crashed near his private airstrip but walked away unharmed. He apparently didn't think about the ELT. The CAP found out, though, and eventually found him—safely at home in bed.

Other unnecessary searches result from ELTs being set off by hard landings and even by dropping the airstairs on corporate aircraft. CAP members are quick to stress that pilots check their ELTs after every flight.

These operations are part of CAP's emergency services mission, which, in 1993, accounted for nearly 35,000 flight hours and 120 lives saved. But CAP has two other missions. One is aerospace education – spreading the word about aviation and space inside and outside the organization. The CAP develops educational materials that are used to teach aerospace subjects in U.S. schools. The CAP also helps sponsor workshops at colleges and universities, where teachers learn to teach subjects related to aerospace. In addition, CAP is a cosponsor, with the FAA and NASA, of the National Congress on Aviation and Space Education.

CAP'S THIRD MISSION is its cadet program, a virtual organization within an organization that teaches teenagers and young adults about aerospace, leadership, physical fitness and military customs and courtesies. Cadets move through the program and rise in rank by passing a series of steps that are heavily aviation oriented.

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Cadets can attend flight-training programs at Air Force bases, pilot Army helicopter simulators and (like their senior counterparts) fly in military aircraft to and from some CAP functions. Cadets can participate in various activities, including the International Air Exchange program, which allows them to visit a foreign country. They can also compete for academic and flying scholarships and test their knowledge, skill and fitness against that of cadet peers from other regions.

Given that the news media focus on the strange, the controversial and the tragic, perhaps the CAP's low public profile is a compliment on the way it does things. Its flight operations are far safer than general aviation's as a whole – even safer than the Air Force's. In 1992, the CAP's safest year ever, members flew 130,000 hours with an accident rate of 1.54 per 100,000 hours, according to CAP figures. The same year, those figures showed a general aviation accident rate of 7.14 and an Air Force accident rate of 1.65.

But that doesn't mean the CAP likes anonymity. They're working on getting the word out.

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Straight Answers to Questions about CAP

HERE ARE SOME of the questions most frequently asked of Civil Air Patrol members—and, of course, straight answers to same:

• Can you fly for free in the CAP?

If you act as pilot in command in a CAP aircraft on search-and-rescue or other official business, you don't pay for your flight time. If you fly a CAP aircraft for search and rescue proficiency, you pay for maintenance and fuel. If you fly your own plane on certain military, federal, state or humanitarian missions, you are reimbursed for fuel, oil and maintenance.

Membership in CAP can qualify you to join some military flying clubs, which can save you money on flight time compared to renting from an FBO. You can't, however, use CAP aircraft simply for pleasure or personal-business flights.

• Can you earn your private license through the CAP?

If you're a senior (adult) member, no. If you're a cadet (teenager or young adult), you get up to six orientation flights. You can also qualify for a solo scholarship that will pay for the aircraft and instructor through your first solo (you pay for fuel). Through a similar program, seniors can qualify for advanced ratings.

• Must you have a pilot's license to participate in the CAP?

No. The CAP needs volunteers for many jobs. Each search-and-rescue aircraft usually carries two crew members besides the pilot: an observer performs navigation and communications tasks and looks for targets, a scanner also looks for targets. Other volunteers serve on ground teams that secure crash sites and in support roles such as aircraft mechanic, ground based radio operator and public-affairs officer.

• Does CAP have different levels of pilots?

Yes. A private pilot with less than 200 hours as pilot in command can qualify as a transport pilot who flies people or cargo in the aircraft in which he is checked out; he cannot serve as pilot in command on CAP missions, such as search-and-rescue. Private pilots with more than 200 hours as PIC can qualify as mission pilots or cadet-orientation pilots.

• Are there benefits to CAP membership?

Yes. You are covered by aviation, auto and general-liability insurance while performing CAP activities. You are also eligible for federal liability protection and employee's compensation (including disability and survivor benefits) while on Air Force-sanctioned missions, such as search-and-rescue.

Because the CAP is a federally chartered non-profit corporation, you can claim tax deductions for membership dues, uniforms, training materials, out-of-pocket expenses incurred during CAP activities and an automobile allowance of 12¢ per mile.

You can order aircraft parts at a discount from the CAP supply depot in Amarillo, Texas. When traveling by rental car, you are eligible for special CAP rates. You can also join the credit union at CAP headquarters at Maxwell Air Force Base near Montgomery, Alabama.

Cadets who earn the Billy Mitchell Award (halfway up the ladder of cadet achievements) can enlist in the Air Force, Air Force Reserve or Air National Guard at a higher pay scale than other enlistees.

• What kinds of flying can you do?

Besides search and rescue and cadet-orientation missions, you can transport blood and human tissue for the Red Cross, aid civil-defense and disaster-relief operations and carry government officials. If you meet requirements, you can fly surveillance and drug-interdiction missions for the U.S. Customs Service, Forest Service and the Drug Enforcement Administration. CAP pilots do not, however, confront persons suspected of illegal activities.

• What kind of training is required to fly with the CAP?

It depends on the kind of flying you'll be doing and in which airplane you'll be doing it. Basically, you need instruction and CAP checkrides for every type of mission you fly. As the flying becomes more demanding, so do the training and checkout requirements. You must check out in the type of CAP aircraft you intend to fly. This involves an initial written test and a flight check, plus annual follow-ups.

One thing you don't need is an instrument rating, because most CAP flying is VFR.

• Do you have to wear a uniform?

Senior members must wear uniforms when working with CAP cadets or flying CAP aircraft. If you meet Air Force standards for weight and grooming, you may wear the Air Force's dark-blue pants and light-blue shirt with the CAP's maroon epaulets. You can also wear other approved uniforms, such as a blue CAP jumpsuit.

• What are membership requirements?

To join the CAP, you must be either a U.S. citizen or an alien admitted for permanent residence, and you must not have ever been convicted of a felony, a sexual offense or child abuse. If you were a member of the U.S. military, you must have been honorably discharged.

There is a one-time $50 fee to join, plus annual dues; local units may charge nominal dues.

You can join the CAP by contacting the unit nearest you. Check your airport to see if there is one in your area, or look in the federal government section of your telephone book. You can also write the CAP national headquarters at 105 S. Hansell St., Bldg. 714, Maxwell AFB, AL 36112-6332.

• Are there any age restrictions?

You must be at least 13 years old or have finished sixth grade to join as a cadet. The maximum age to enter the cadet program is 18, which is also the minimum age to become a senior member. Youths can remain cadets until age 21, when they must either become senior members or leave the organization.

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Mountain Searching With the CAP

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Mountains obstruct or block ELT signals. A satellite may receive a signal, but search teams may not pick it up until they are virtually right over it, especially if the wreckage is in a canyon.

THE CIVIL AIR PATROL Emergency Services mission is to conduct search-and rescue, disaster-relief and other missions for public assistance. In Colorado, where that mission is greatly affected by the rugged Rocky Mountains, the CAP has special supplemental regulations for mountain flying.

Flat-Land Searches

From the foothills of the Rockies to the Kansas/Nebraska border, the eastern half of Colorado is flat. Surface elevations range from 5000 to 3500 feet MSL. In electronic searches, a skilled crew can isolate a signal fairly quickly; but when there is no ELT signal, visual searches are flown on preplanned tracks over the search area. The distance between these tracks is one or two miles, depending on the search object, altitude, visibility, weather conditions and sun position. Probability of detection is high.

Mountain Searches

The western half of Colorado rises abruptly to the west of a line that runs from Fort Collins through Denver to Pueblo. There are more than 50 peaks in that part of the state that rise to 14,000 feet MSL. The area is heavily forested, and many mountain passes are in the 11,000-foot range, above the timberline. While the terrain falls off to the west and becomes less forested, it remains rugged and uneven all the way to the Utah border, where it is approximately 7000 feet MSL. There are few flat areas, so the probability of detection goes down.

In the Rockies, high density altitudes affect takeoffs and landings, as well as cruise and search performance. A variety of extreme wind conditions can exist: morning and evening winds in canyons, up- or down-slope winds, winds across ridges, orographic lift, rotors, etc. Short, rough, one-way runways and icy surfaces in the winter are not uncommon. Poor, minimal communication and navigation reception are also common.

Cessna 182s are normally loaded to their max gross weight with a crew of three, plus survival gear. Short/soft-field takeoffs and landings are common, as are one-way runways. As a result, go-arounds can be extremely dangerous and are not recommended. Crosswinds, tailwinds, high density altitude and occasional high relative humidities worsen airport operations. Flight plans with 30-minute check-ins are a standard operating procedure. Communications are usually relayed through a communications bird that circles high for relay to the search base.

Enroute, flight is well above the terrain, and ridges are approached at 45° angles. Position the aircraft so that, in the event of a complete power failure, a 90° turn or less allows a descent to lower terrain. Like a sailplane pilot, look for orographic lift coming from air flowing upslope. Flying with the wind, look for rotors or downdrafts after crossing a ridge; maintain at least the maximum-rate-of-climb airspeed. Flying against the wind, look for rotors or downdrafts when approaching the ridge. The 45° approach leaves a way out if wind or power problems force you toward a ridge.

Fly down canyons and be sure you have a way out. Fly the updraft side, not the middle or downdraft side, so you can benefit from orographic lift and, if a 180° turn is required, it will be into the wind to shorten the turn radius.

The Search

In visual searches, the rescue crew confirms the four grid corners to verify their location. Because mountains obstruct VOR/DME signals and loran can be intermittent, the most reliable navigation instruments are a pair of 20/20 "mark-one eyeballs" and a sectional. GPS will eventually be phased into CAP aircraft, but for now, pilotage is the bottom line.

Electronic searches are difficult because mountains obstruct or block ELT signals. A satellite may receive a signal, but search teams may not pick it up until they are virtually over it, especially if the wreckage is in a canyon. A signal reflecting off the side of a mountain or canyon (it sometimes causes multiple signals) compounds the problem of pinpointing a target.

In visual work, if there is a mountain peak in the grid, the search begins from the top and continues with a contour search down around it. The plane is flown in a descending spiral around the mountain. In a contour search, scanning is only one-way — in the direction of the peak.

If above the timberline, scanning can be to the side and down. It is virtually impossible to see wreckage at an angle through trees, so at or below the timberline, scanning is nearly straight down in order to look directly into the forest to the floor below.

Multiple passes down a canyon may be required to thoroughly search it. Flying down a canyon or around a mountain takes less time than climbing back to the top. In mountains, the time spent in the actual search is usually less than the positioning time. Therefore, mountain searches take more time than flat-land searches.

On average, mountain search-and-rescue flights in Colorado take longer, are more risky, have more communication and navigation problems and have a lower probability of detection than flat-land searches. While this work may sound exciting, none of it would be necessary if not for the need to search for people in distress. And that is what Civil Air Patrol emergency services are all about. —*Frank Gose*

Sharing the best kept secret in aviation.

For more information, call or write one of the following:

CAP Unit Locator: 1-800-FLY-2338
Public Affairs: (334) 953-4287

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